

Appl. No. 10/613,426
Amd. Dated November 17, 2005
Reply to Communication of October 11, 2005

REMARKS/ARGUMENTS

Reconsideration of the present application, as amended, is respectfully requested.

Previously pending claims 1-23

With respect to previous pending claims 1-23, claims 1-4, 8-11 and 17-20 were rejected under 35 U.S.C. §103(a) as being obvious over previously cited U.S. Patent Application No. 2003/0074449, published April 17, 2003, R. Smith *et al.*, inventors, in view of previously cited U.S. Patent Application No. 2002/0004842, published January 10, 2002, K. Ghose *et al.*, inventors. Claims 5-7, 12-16 and 21-23 were rejected under 35 U.S.C. §103(a) as being obvious over the combination of the Smith and Ghose patent applications in view of U.S. Patent Application No. 2003/0185223, published October 2, 2003, M. Tate *et al.*, inventors.

In arguing for the allowance of claims 1-23, the applicants have based their arguments upon independent claims 1, 8 and 17, and that combination of the cited Smith and Ghose references did not render these claims obvious. The applicants press these arguments, which have been only partially addressed in the Communication of October 11, 2005.

1) The applicants had argued that combination of the Smith and Ghose references were improper because there is no motivation to make such combination. See MPEP §2143. Specifically, the applicants do not see in the Smith application any reference to a problem or dissatisfaction with using frame counts for buffer flow control. The supposed motivation cited by the Examiner, i.e., the data packet protocol that "the number of packets in transit on the link cannot exceed the buffer credits assigned to the link", page 5, paragraph 0093, is refuted by the following paragraph in the Smith reference. "Advantageously, the invention uses the buffer credit link flow control mechanism of Fibre Channel, and ESCON, to ensure that no buffer overflow occurs...". Page 5, paragraph 0094. The applicants respectfully request that the Examiner specifically point out in the Smith application any motivation to abandon frame counts.

On the other hand, Ghose *et al.* stated the problem of TCP windowing flow control, retransmit timeout mechanism and associated overhead and addressed their problem with buffer-to-buffer credits for flow control and negative acknowledgements for reliable delivery. See paragraphs 47 and 54, in particular. Hence why a person using a Smith network system with a

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SONET/SDH transmission network interconnecting Fibre Channel protocol networks would use the teachings of the Ghose TCP network remains unexplained.

The Examiner has neither pointed out where in the Smith reference there exists a dissatisfaction to abandon frame counts, nor explained why a person of ordinary skill would be abandon the satisfactory frame counts of the Smith network system and substitute Ghose's buffer-to-buffer credits for flow control and negative acknowledgements for reliable delivery, which solved the problem of TCP windowing flow control, retransmit timeout mechanism and associated overhead.

2) Even accepting the combination of the Smith and Ghose references for purposes of argument, the applicants had also argued that that particular combination suggested by the Examiner does not render the applicants' claims obvious. The Ghose application teaches a flow control mechanism using buffer credits based on bytes, but not in the manner of what the applicants claim. For example, claim 1 recites, "...transmitting more GFP-encapsulated client data frames responsive to said information of said number of bytes available in said remote transport interface buffer and said number of bytes in transit from said local transport interface to consideration of loss or corruption of encapsulated client data frames...(underlining added)." On the other hand, the Ghose flow control mechanism uses byte ranges, not the number of bytes. "...[E]ach credit unit specifies the permission to send a unique range of bytes in the sequence...". Page 4, paragraph 0061. More data is transmitted, not responsive to the number of bytes available in the receiver buffer and in transit, but rather responsive to a range of bytes.

Furthermore, the Ghose flow control mechanism does not transmit data to maximize usage of the receiving buffer without consideration of loss or corruption of the transmitted data, but rather to "maintain a smooth flow of data from the sender to the receiver." Page 9, paragraph 0117. The Ghose flow control mechanism does not transmit more data responsive to the number of bytes available in the receiving buffer and the number of bytes in transit without consideration of loss or corruption of the transmitted data. Rather, the Ghose flow control mechanism is responsive to the smooth flow of data and avoidance of network congestion. "By delaying the sending credit installments or by changing the byte range covered by a credit unit, the receiver

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can regulate the amount of data a sender can send. This mechanism is used to cope with congestion in the network.” Page 9, paragraph 0117. This concern for smooth flow of data and congestion reflects consideration for the loss and corruption of the transmitted data. On the other hand, the applicants’ invention is directed toward the transmission of the maximum amount of client data across the transport network in the shortest time possible. Any resulting loss and corruption of the transmitted data is handled by another network protocol. See applicants’ specification, page 12, line 17 page 13, line 2..

In the Communication of October 11, 2005, the Examiner had responded to this argument:

Applicant argues that the Smith and Ghose references do not reach the applicants’ claims. Examiner disagrees with applicant contention. Smith discloses a buffer-to-buffer flow control using frame counts. Ghose teaches buffer-to-buffer credits for implementing flow control based on the number of bytes. Ghose reference is used to show how bytes are used for implementing flow control over a packet oriented transmission network. Therefore, the combination of the Smith and Ghose references does reach the applicants’ claims.

Applicant argues that the Ghose flow control mechanism does not transmit data to maximize usage of the receiving buffer, but rather to “maintain a smooth flow of data from the sender to the receiver. Nor does the Ghose flow control transmit more data responsive to the number of bytes available in the receiving buffer and the number of bytes in transit. Examiner respectfully disagrees with Applicant assertion. Ghose clearly discloses that credits (buffer-to-buffer credits) are issued from the receiver to the sender prior to data transmission. Credits are indicative of **buffer space available at the receiver** for holding data received from the sender. The credit issued by a receiver to a sender indicates **the amount of data the sender can transmit to the receiver safely without causing buffer overflows at the receiver**, see page 3, paragraph 0048. This shows that the Ghose flow control mechanism does transmit data to maximize usage of the receiving buffer. (Examiner’s emphasis.)

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The applicants assert that this response is insufficient against the applicants' arguments. The applicants have pointed out that the Ghose flow control uses byte ranges, not number of bytes. The Examiner has apparently ignored the language of the applicants' claims and the distinction between the number of bytes and byte ranges. Furthermore, the response, especially the second paragraph, is apparently based upon confusion between the Ghose flow control system and buffer-to-buffer credits, which are only part of the Ghose flow control system.

The Ghose flow control system, as the applicants have pointed out, does not transmit "more... client data frames responsive to said information of said number of bytes available in said remote transport interface buffer and said number of bytes in transit from said local transport interface to said remote transport interface to maximize usage of, without overfilling, said buffer without consideration of loss or corruption of...client data frames," as called for in independent claim 1, for example. In contrast, the Ghose flow control uses a buffer-to-buffer credit mechanism and NACKs (Negative Acknowledgments) to maintain a smooth flow of data between the sender and the receiver. See page 3, paragraphs 0047, 0053, 0054 and 0056, for example. Consideration is taken of lost or corrupted data. "When packets are corrupted or lost, the receiver requests an explicit retransmission of the packets from the sender by one or more negative acknowledgements (NACKs) for the lost packets. When a predetermined number of NACKs are outstanding the transmission of available credits are reduced or delayed. This prevents excessive credits being sent when the quality of the communications link degrades, congestion occurs or when load problems occur at the receiver." Page 4, paragraph 0056. The Ghose flow control system does not meet the language of the applicants' claims.

If the Examiner wishes to cite only part of the Ghose flow control system, i.e., the buffer-to-buffer credit mechanism, against the applicants' claims, he is requested to explain why he is making such a selective use of a portion of the cited prior art and where in the cited prior art is there such a teaching to make such a selected combination.

It should be readily evident that the Smith and Ghose references do not render independent claims 1, 8 and 17 obvious. These claims are allowable. Dependent claims 2-7, 9-16, and 18-23 are likewise allowable.

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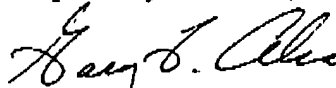
New claims 24 and 25

Finally, new claims 24 and 25 have been added and are supported by the specification. See, e.g., page 10, line 10: "the port card 14 also starts a timer in step 54".

The new claims recite, "...tracking the number of bytes of GFP-encapsulated client data frames in transit from said local transport interface to said remote transport interface, including timing at said local port against a time limit to check for loss of GFP-encapsulated client data frames across the transport network," and "transmitting more GFP-encapsulated client data frames responsive... to said timing to maximize usage ...," or similar language. On the other hand, neither Smith nor Ghose teach or recite the above limitations. Smith does not teach or suggest any timer. Ghose actually teaches away from the above limitations. "No timers are ever maintained by the sender, significantly reducing processing overhead." Col. 4, ¶ 62.

Therefore, the applicants request that all rejections be removed, that claims 1-25 be allowed, and the case be passed to issue. If a telephone conference would in any way expedite the prosecution of the application, the Examiner is asked to call the undersigned at (408) 868-4088.

Respectfully submitted,



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